Krafft-Ebing.

THE
ALIENIST AND NEUROLOGIST.

VOL. XX. ST. LOUIS, JULY, 1899. No. 3.

RELATIONS BETWEEN NEURALGIA AND TRANSITORY PSYCHOSES.*

By PROF. v. KRAFFT-EBING, Austria.

UNUSUAL and still correct is the statement that certain phenomena are forms of peracute psychical disease, temporarily and genetically connected with neuralgia.

Owing to the enormous frequency of this disorder and the great rarity of attending psychosis, special dispositions, chiefly the coincidence of very unusual conditions, are essential to bring about this connection.

The ways in which a neuralgia might react on the psychical organ must first be observed: the *psychical* factor of pain, the *organic* factor of a disorder of the psychical organ directly from a peripheral process of excitement, indirectly by way of a functional disturbance of the vasomotor centres and tracts, and thus a change in its circulatory relations (vascular spasm or paralysis).

But from the standpoint of clinical experience the suggestion is obtruded for the explanation of the rarity of insanity due to a neuralgia, that in such cases the neuralgia might have a symptomatic import, *i. e.* could be the symptom or syndrom of a permanent morbid neurotic state.

Very frequently epileptic and hysterical neuroses are met with in such cases.

All difficulties for the pathogenesis would be removed, if the sensory affection here had the significance of an aura of a subsequent psychical equivalent of one of these neuroses, or at least (hysterical cases) played the role of an

*Translated by Dr. W. Alfred McCorn, Resident physician "River Crest" Astoria, New York City.

agent provocateur, or that of the spasmogenic zone of a seizure of hysteria gravis limited to the *phase de délire*.

Such a symptomatic significance must at once be thought of in a neuralgia, when the attack is accompanied by a visionary state of consciousness and is followed by amnesia for all that transpired during it.

The honor of having first called attention to the clinical connection between neuralgia and transitory *alienatio mentis* belongs to Griesinger (1866) and Schüle (1867). The analogy of the cases with aura and epileptic delirium has not escaped these observers.

Further efforts have been bestowed on this obscure province by the author (1868 "Transitorische Störungen des Selbstbewusstseins," 1883 "Dysphrenia neuralgica transitoria," Maschka's Handb. d. Ger. Med. IV., 598), Anton (Wiener klin. Wochenschr. 1889, 12-14), J.v. Wagner (Jahrb. f. Psych. VIII., 287) and recently Laquer (Archiv. f. Psych. XXVI., 3).

In the attempt to arrange this clinical material according to the above pathogenetic point of view the *group of cases induced by pain through affect, then purely psychical*, appear first.

The simplest are the states of passionate excitement, related as affective conditions to the pathological affect, from transitory derangement of the psychical function induced by excessive pain *(tetanus uteri)* (see author's article in Maschka, p. 631 and Lehrb. der ger. Psychopathol., 3 Aufl., p. 385).

In the other cases of neuralgic transitory affective psychosis the neuralgia in the tract of the fifth, occipital and intercostal nerves are exclusively to be considered.

Cases of transitory psychosis, interesting as affective delirium due to neuralgia, seem to be very rare.

The case reported by J. Wagner (Jahrb. f. Psych. VIII., p. 287) seems to me such. Peasant's wife, evidently somewhat imbecile, has left conjunctivitis and neuralgia on the same side, became hypochondriacal, manifested taedium vitae. In the excerbations, respectively attacks of neuralgia, which she thought to be the devil in her, the head pains were allegorized as an animal biting her.

The following case might be cited as pain, respectively affect, delirium.

Case 1. S., 23, medical student, was admitted to my clinic on October 9th. No hereditary taint. Of a peasant family. Convulsions when a small child. Except scarlet fever and measles (about seven) has never been seriously ill. Normal mental and physical development. Since puberty, insomnia and diffuse headache frequent during the hot season. Heart palpitates during emotion. Slight tolerance for alcohol. Vita sexualis normal. Does not drink.

On October 2nd, 1893 a carious molar, which had given him pain for a long time, was drawn under an anæsthetic.

The pain in the jaw continued and being violent deprived him of sleep. On the 8th two teeth extracted. No relief. On October 9th the patient took some rum and one-eighth liter of wine to procure sleep, not having slept for eight days and eaten almost nothing, and slept a short time.

The patient is entirely ignorant of the following events of his own knowledge.

He awoke in a short time, complained of intense pain, became excited, wholly confused, gesticulated wildly, spoke irrationally, did not answer questions, continually exclaimed "clinic, dentist, papa telegraph," rolled about in bed. This lasted for two hours.

The patient was brought to the clinic, where he arrived perfectly lucid. After a while he again complained of pain, was excited for a short time, disturbed, railed at the dentist, the toothache, but then became quiet, slept well the rest of the night, felt perfectly well except some "drawing" in the jaw and objectively presented nothing abnormal psychically. He had only a vague remembrance of the time of the attack.

Skull normal, adherent lobules, neuropathic eye. Slight fine tremor of the fingers, knee jerk somewhat exaggerated, dilated pupils reacting promptly. Patient remained at the clinic until October 14th. He remained well afterward.

A neuropathic constitution might ever be present in

such cases of "pain delirium" and have a predisposing effect.

The cases do not differ essentially from other affective psychoses. References to the neuralgic factor eventually result in allegorizing delirium.

More difficult is the pathogenetic interpretation of the *cases not psychical, but organic due to neuralgia.*

As we know little of the dynamic effect of violent centripetal irritations (*e. g.* neuralgia) on the cortex and cannot well separate the influence of pain from the insomnia, etc., generally accompanying them, hypothesis is given free rein. Doubtless it might be that by continued pain the cortex is put into a state of abnormal susceptibility and exhaustibility, what might also be true of its vasomotor functions.

Laquer's assumptions with respect to his own case seem worthy of notice that "by irradiation of intense pain certain changes in excitability of the cortex and thus states of confusion and incoherence (delirium) on a hallucinatory basis, with more or less pronounced amnesia" may be produced.

A special predisposition could be presumed for which primarily a latent hysterical or epileptic neurosis, then a degenerative constitution of the nerve elements, might be thought of.

The heterogeneousness of the pathogenesis may be the reason the disease types are here so heterogeneous (mere dysthymia with delirium still within the bounds between obsession and delusion, transient hallucinations to fully developed hallucinatory delirium, intense freezy, raptus-like states, etc.)

The neuralgic factor may here find allegorical utilization, in so far as it forms the nucleus of the delusions.

The alterations of consciousness are very heterogeneous. In cases, where it is quasi a matter of a focal, circumscribed irritation of cortical areas serving for ideation and sense perceptions (concurrent ideas, concurrent hallucinations in Griesinger's sense), the clouding of the consciousness is very slight. Where the neuralgic irritation seems to act

through the vascular system (vasomotor reflex neurosis?), the consciousness is profoundly clouded and, corresponding to the diffuse brain change, the psyche generally disordered.

Scanty casuistics is found in literature for this group of vesania transitoria.

Griesinger's four cases are too aphoristically reported for certain utilization.

The first three (1. Woman, 40 years of age, inveterate neuralgia of occipital and fifth—hallucinations and absurd thoughts when she closes her eyes during the neuralgic attack. 2. Girl, supraorbital neuralgia on left side with confusion, psychical depression, eroticism. 3. Man, 45, right prosopalgia-hallucinatory delirium), I cannot accept with the author as pain delirium, nor the following case of Laquer's: Conductor, 54, without neurotic tendency. Does not drink. Rheumatic (?) neuralgia of the right fifth in its first branch. From attacks of pain occupation and expansive delirium for one-fourth and one-half hour several times a day for eight weeks.

A case observed by Anton (Wiener klin. Wochenschrift 1889, 12) and reported in his paper "Ueber Beziehungen der Neuralgie zu den Psychosen" of painful concurrent ideas produced by a supraorbital neuralgia might be added.

Kl., 23, single, lawyer, of a very tainted family, once rachitic, has developed well, had gotten into political complications and in prison, where tormenting headache occurred. In the fourth month of imprisonment attacks of "unconsciousness" for twenty minutes with shrill laughter. Subsequently, after discharge, states of fear with taedium vitae.

Just prior to admission to the psychiatric clinic in Vienna on October 3rd, 1888, owing to a serious mental condition, which had followed a faint, repeated attacks of three and four days duration of unconscious acts, talking, laughing, crying had occurred.

At the clinic psychical depression, fear, taedium vitae, marked hyperasthesia and periodical neuralgia in the supraorbital nerves.

In the excerbations of the neuralgia first a feeling of dizziness, mental incapacity, confusion, then ideas of pain-

ful import, which turns on unpleasant reproductions, but also adverse, even hostile relations to those about and the world.

Attacks especially after affect and relative mental stress. Marked improvement from faradic treatment of the diseased nerve areas.

The following cases of my own observation may illustrate the heterogeneous neuralgic psychotic clinical types as to difference in pathogenesis.

The first is a dysphrenia in the sense of Griesinger's qua concurrent ideas, the second a hallucinatory delirium with amnesia, the third evidently a vasomotor reflex psychosis, a transition case to the epileptic group, but without evidence of this neurosis.

Case 2. Louis M., 10 years old, mother hysterical, weakly, of neuropathic constitution, anemic, reduced in nutrition from rapid growth and forced education, has been periodically depressed for past four months, anxious and in tears complained that such horribly nasty names and general thoughts came into his mind, which he could scarcely refrain from uttering. This condition occurred daily, lasted several hours and was accompanied by intense boring pain in the left breast and a globus-like feeling.

When the pain returned so did the evil thoughts immediately.

When free from pain the boy was cheerful and well, yet of late he has thought about the evil ideas and began to regard them as sinful or even supernatural.

A careful examination revealed a nervous state, anemia, neuroses, masturbation could be excluded.

The tract of the 1st, 4th, 8th, 9th intercostal nerves was painful on pressure.

Forcible pressure on the sensitive neuralgic nerve tracts makes the boy anxious, whining and immediately produces the disagreeable thoughts. A suitable general and local treatment effected a recovery after several months.

Case 3. Marie S., servant, 17, was admitted to my clinic May 28th, 1896.

The police surgeon's report shows that S. has given

satisfaction in her last place for eight days, became excited the last night, cried, wept, rolled about the floor, talked disconnectedly, among other things of her prior mistress, who had been unreasonably jealous of her, forced herself into her room with a knife at night and she had insulted H.

Patient is disturbed whining, scarcely to be induced to talk, claims to have been stabbed in the head with a knife, that there is a team of horses in her brain.

She has no fever or vegetative disturbance. Cranial circumference 52. She complains of severe headache. Whole trigeminal as well as occipital tract, particularly the right, very painful on pressure and the site of spontaneous pains. No stigmata hysteriae.

Left to herself she broods, is wholly disoriented as to her position, does not care where she is, unconcerned as to what goes on about her. temporarily she is entirely reactionless, still without being stuporous.

She gives the impression of being wholly absorbed in thought. Now and then assertions that she is being constantly insulted by her previous jealous mistress. "She gives me no peace."

She complains that a certain woman causes the pains by jabbing a knife into her head. The nights are quiet and generally spent sleeping.

On June 2nd, with abatement of the headache, she became more rational, freer, but felt that a knife was stuck into her head and complained until the fourth afternoon of knife jabs and that the woman kept up her insults.

She then became perfectly lucid and stated that from March 26th, 1896, she had to suffer a great deal in her former place from the jealousy of her mistress. On May 13th she had finally left the place, owing to the ever worse recurrence of the jealousy, to take another in the vicinity.

As often as she met her former mistress she had been insulted. She said she could no longer bear the trouble from this injustice and infamous attacks on her honor.

On May 25th a very painful scene occurred on the street. From the affect thus induced she had violent headache, loss of appetite and insomnia.

The night of May 28th she had spent ironing, owing to her insomnia. From headache and crying she could not work after half past eleven. She sat down. Of what happened from then until June 4th, when she found herself in the hospital, she is entirely ignorant.

She still had some headache, but which passed away within a few days, presented no variations physically or mentally, no longer manifested any affect in remembering the injuries done her by her former mistress.

On June 10th, when told her father had come, she presented her former condition.

She seemed disturbed by the visit, dreamy, did not recognize her surroundings, nor her father, had headache, winched on pressure to the right side of the head, gaze fixed, manifested no delirium and after about four hours came to herself with amnesia for this period.

On June 17th, after being well in the interval, neuralgic headache, claimed the woman has stabbed a knife in her head. The dreamy state (Dämmerzustand) more profound than before. No hallucinations of hearing.

June 21st again lucid. From then on until discharge (June 29th) violent headache daily, but without psychoathic symptoms.

It was learned from her father that there was no hereditary taint, that his daughter had been very emotional from childhood, cried readily, often had headache and in 1895 from a box on the ear by her mistress she had been very sick and confused as at this time, so that she had to spend three weeks in the hospital at Pressburg.

She has never had a trauma capitis.

Anamnestic and present inquiries as to epilepsy and hysteria were entirely negative.

Case 4. Miss Rov——, 26, teacher, admitted to my clinic October 11th, 1874, of healthy parents. One sister nervous.

Patient was well as a child, had chlorosis at 17, menstruated at 20. Frenzy with nymphomaniac symptoms for five months in her twenty-fourth year. Complete recovery. At the end of August, 1874, became ill from shock (father

injured on the railroad)—cardialgia, feeling of pressure in the epigastrium, depressed, great emotional irritability. The epigastric trouble ceased in three weeks, only the headache, restless sleep, bad dreams and praecordial fear remained.

From October 20th, 1874, temporal and intercostal neuralgia with psychical depression, desire to be alone, aversion for work.

The neuralgia was constant with excerbations. Attacks of the following character occurred with them:

As the temporal pain increased the patient became pale, faint. She comes to herself in a few minutes; she whines, complains of intense temporal pain on the left side. The face is then suffused. Occasionally several such attacks occur in a day, to which the temporal neuralgia seems to be an aura. A circumscribed point above and external to the upper border of the left orbit is found to be the site of the pain. It is very sensitive to pressure and experimental attacks may be produced from this point. The pain does not radiate.

No tissue or bone changes are found at this site. The first branch of the trigeminus is everywhere sensitive to pressure. The attacks are never accompanied by nausea, scotoma, etc. Fundus negative. The left ear is extremely hyperasthetic, the ticking of a watch even being painful. Stigmata hysteriae are not discoverable.

Beside the temporal there is an intercostal neuralgia on the left side, which excerbates with the first, but has no influence on the occurrence of the attacks.

The vegetative organs functionate normally. Uterus virginal. Pressure on vaginal portion painful. Prescribed cold friction, lukewarm baths, tonics, morphine injections *ad locum dolentem*.

The symptoms of dysthymia disappeared in a few weeks. The local symptoms and attacks continue.

These occur once or twice daily, last about half an hour, attended by complete loss of consciousness, which does not occur suddenly, but gradually. She grasps at the painful temporal and intercostal region, covers it, trembles

violently when pressure is made on the former. Jactation, throws herself about, strikes, which appear like unconscious reaction to intense pain. At the height of the attack she often groans, tremor-like twitching of the lower extremities, similar to a rigor, clawing at the pillows, grinding the teeth and rotation of the eyes upward occur. Frequently there are traces of delirium—disconnected, incoherent words, conversations with her brother.

Respiration and circulation undisturbed, but pulse small and frequent. She quickly comes to herself again after the attack, without vertigo, but is faint and exhausted. No urina spastica.

Menses regular, of no influence on the attacks.

She has been well psychically since January 1875. The temporal neuralgia is manifested here as an aura. Between the attacks there is no more pain on pressure. The intercostal neuralgia has become more promlnent. It is unable to induce the attacks, but excerbates with them and is especially intense afterwards. The attacks became more rare, not induced by psychical irritation, only by the intercostal neuralgia. Under bromide treatment (6,0 pro die) and continuance of the morphine injections (0,03 twice daily) until May the attacks became very rare.

As no attacks were observed in September and October and the disease being limited to a slight temporal sensitiveness and nervous excitability, Miss R. was discharged November 9th, 1895. The recovery has been maintained.

The connection between neuralgia and transitory psychosis most frequently consists of an epileptic or hysterical change being present in the central nervous system and the neuralgia is simply the aura of a seizure of one of these two nervous diseases. If merely a psychical seizure occurs, as is quite common in epilepsy as an equivalent of a convulsion, in hysteria gravis as a rudimentary attack *(période de délire)*, a neuralgic transitory insanity occurs, which is only clear when the neuralgia is recognized in its true import.

It is even probable that in the neuralgic aura of an epileptic seizure it may end there or be abortive in so far

as only clouding of consciousness and several symptoms of the otherwise classical convulsive attack accompany the neuralgia, respectively mark the epileptic seizure. The whole then gains the stamp of a neuralgic equivalent of the ordinary seizure.

If a neuralgia on a hysterical basis induces transitory insanity, this always happens in the way, that the neuralgic area acquires the import of a spasmogenic zone and thus excites the attack, which may be limited to the *période de délire*.

An interpretation in the sense of an epileptic equivalent seems to me justified in the following case reported by Anton.

K., 18, book-keeper, mother tainted, gifted, nervous, afflicted with frontal headache since early boyhood.

At sixteen, in connection with his mother's death, unconscious collapse, followed by excitement, confusion, senseless violence, biting, grinding the teeth. Such attacks repeatedly. Since then irritable, the tormenting headache aggravated.

In July, 1888, suicidal attempt in the Danube with amnesia.

Since then a grudge against his chief, ideas of being revenged on him.

On August 2nd entered his office for this purpose, attack of furor with amnesia. At the clinic exhausted, disoriented, himself again after four days.

Second admission to the clinic September 15th, 1888, with marked hyperasthesia of supraorbital nerve. Patient exhausted, confused, is Dr. Faust, 300 years old, has been through the Thirty Years War, etc.

Patient actually romances, talks of his delusions freely, otherwise very reticent, amnestic for vitae anteacte, previous admission to the clinic. Rapid recovery from the psychical condition after two days, with complete amnesia for the time from September 9th to 17th.

His writing is entirely different from that he did as Dr. Faust.

On the 17th the supraorbital nerve still painful. The neuralgia abated.

Patient seems easily fatigued psychically, still nervous, excitable, depressed as before.

While at the hospital two attacks of furor of about ten minutes duration due to emotion, analogous to that on August 2nd, each time with exerbation of the neuralgia.

The two following cases observed many years ago may be cited as types of the clinical pictures of neuralgic epileptic and hysterical transitory insanity.

Case 5. Epilepsia larvata in form of vesania neuralgica transitoria.*

In the following case it is a matter of hallucinations and delirium occurring periodically with an intercostal neuralgia in a girl formerly subject to epileptic attacks (dysthymia neuralgica epileptica), which have gradually taken the place of the latter and from the peculiar psychical picture of the paroxysmal and intraparoxysmal symptoms may be referred with certainty to the fundamental cause (epilepsy). At the same time clinical observation has succeeded in tracing the individual paroxysms to the peripheral cause (neuralgia), and attention to their reflex excitement had a favorable therapeutic result in the way of a relief of the pathological condition by subcutaneous injection of morphine, which also afforded experimental evidence of the etiological connection of the individual symptoms with the reflex excitement of the paroxysm. The importance and difficulty of an expert opinion in such conditions occur from a theft, which the patient committed during an attack of her trouble, causing the court to call for an opinion as to her sanity at the time of the act.

Wilhelmine W——, 33, Catholic, single, servant, later laborer and vagabond, was transferred July 10th, 1866, for the purpose of treatment and observation of her mental condition, from the detention prison to the asylum at Illenau, where she had been since May 15th for a theft of linen committed April 26th, 1865, and she had become insane.

The official record of the previous life of W. gives the following statements: The crime, for which she was arrested,

*Zeitschr. f. Psych. XXIV, 4.

was a theft of linen committed on the night of April 26th between one and two o'clock at the bleaching place in R. immediately after the theft she had hastened away with her booty, wandered about in different villages for many days, disposed of a part of the stolen things and with the remainder went to her mother on May 1st and told that she had been given the linen by a family with whom she had been. When arrested on May 15th a part of the stolen things were found, as well as some stolen before, the balance the mother and daughter had sold or used up.

The accused confessed frankly and was confined for a time in the detention department of the jail.

In the early part of her imprisonment, from which marked anemia, oedema of the feet and constipation soon occurred, significant anxious restlessness made its appearance nearly every evening; she claimed that at night a large black man, with documents under his arm, came into her cell, sat on her bunk and gazed at her. The nights were sleepless, restless; during the day time she was quiet. In spite of being changed to the general prison, increasing restlessness, silly efforts to escape, taedium vitae occurred from July 5th, so that the prison physician moved for her removal to the insane asylum, which was effected on July 10th.

On admission we found a strongly built person, but very much run down and extremely anemic. Skull somewhat dolichocephalic, symmetrical; indifferent, often stupid facial expression, sluggish imitation, sluggish movements, but no disorder of the motor apparatus. No disease of the vegetative organs, yet well advanced anemia essentially pronounced in weak circulation, waxy, somewhat sallow skin, oedema of the feet, besides leucorrhœa.

A number of nerve tracts, but especially the whole course of the eighth left intercostal, were very sensitive to pressure, so that pressure on the pain points of these nerves (Vallaix) produced a peculiar anxious excitement and irritability in the patient and she would ask if she should tell the story of the "black man." Psychically there was found a high degree of weakness of memory and stupidity,

so that she was unable to give any information as to very simple facts of her former life, and an anamnestic investigation of them was impossible. Like the whole manner and imitation the tardy answers to wholly concrete questions betrayed a marked enfeeblement of the psychical mechanism, which was further expressed in the childish manner, great proneness to cry and irritability. She frankly confessed the theft when questioned, but immediately claimed, crying and moaning, she was innocent, a black man, whom she seen before and now in prison, had told her to take the linen; she had not been able to resist, also thought nothing further about it. Several days before and more often earlier her head had felt so peculiar; she has often felt a pounding in it, when it seemed as though a whole multitude of people shouted at her. When this happened she must get away; she often wandered about aimlessly for days. This had occurred every few weeks. After the theft she had done so for three days and nights, she had been able to do nothing but run and had a feeling in her head and heart as if she must take everything she saw. She adheres to the reality of the phantom; the memory of it makes her very uneasy; could it not have been the devil and was she not lost? Then by her silly crying, moaning and painful thoughts wholly uncontrolable, she showed she was in the power of the demoniac idea.

During the following weeks this picture of imbecility with childish irritability and marked anemia changed but little. An opinion desired soon after admission could only be provisional from want of all anamnestic data and the brevity of the period of observation; it is evident that a state of imbecility exists, the anemia apparently due to the long periods of insufficient nourishment, and it was assumed that owing to the advanced state of the disease on admission, the mental disorder had been present before, probably at the time of the theft. Patient is in a condition in which she can offer no resistance to the hallucinations, neither then or now recognized as such, which incited her to the act. On this provisional opinion the examination was postponed and the patient left in the asylum, where by con-

tinued observation and careful investigation of the anamnesis we were finally able to discover the connection of the symptoms with the pathogenesis and, on this basis, institute a successful treatment.

Until the beginning of November the weakness of memory and intellect already mentioned, great emotional irritability, periodical depression, vague feelings of fear, now and then complaints of intercostal neuralgia formed the chief psychical and somatic symptoms, when on the 18th a violent paroxysm occurred, which made the comprehension of the case very easy. The patient, in whom nothing peculiar had been noticed except a certain agitation and greater irritability, suddenly cried out, ran away and was found by the nurses lying on the ground in a desperate struggle with a terrible vision. Her head was burning hot and red, expression wild, face distorted; the patient suddenly attacked those about, bit, kicked, struck with all her might, so that restraint was necessary. Put in bed the violence and furor continued for ten minutes, she then became quiet, began to appreciate her surroundings, came to herself quickly, yet was very irritable, greatly confused, depressed and had painful thoughts, that God had forsaken her, for several hours and then passed into the *status quo ante*. It was shown that she had no consciousness of what had transpired during the attack, yet she could give quite a good account of the events in her somnolency.

With the pounding in her head, a thrill through her body, a fearful anxiety came over her. A black man with long ears, long beard and hoofs stood before her, demanded her eternal salvation, ordered her to strike everyone. He had stabbed her in the heart, struck and burned her side. She could not comprehend how he had gotten through the door, but it must be really so, for she had seen, felt and heard him. This condition of a transitory delirium, which is isolated in the whole course of the disease, still more the patient's statements, that she has been burned, stabbed in the side, etc., which indicates some painful sensation at the place, the fact that the intercostal neuralgia had been previously observed at this place, with whose excerbations

states of psychical depression, irritability or temporary appearance of the hallucinatory figure of the black man had occurred, must awaken the suspicion that we have a dysthymia neuralgica, a reflex psychosis, which is due to a peripheral irritation, perhaps to the intercostal neuralgia already proven.

The presumption could soon be confirmed, for on the 30th we were called in due time to another attack, so the presence of an extremely violent neuralgia of the 8th left Intercostal could be proved. This time the attack lasted longer, about half an hour, but otherwise the same as the previous one. Pressure on the neuralgic area aggravated it intensely and immediately led to the recurrence of the idea that the phantom stabbed her in the heart. When the attack ceased the neuralgia had also disappeared. The diagnosis was no longer to be questioned; *we had a dysthymia neuralgica, which, according to the intensity of the pain, was manifested either as mere psychical depression, temporary hallucination, or foribund delirium, whose several delusions drew their material from the neuralgic area, and were, so to speak, merely the allegorical interpretation of the pain perceived in thc dream state.* Such attacks occurred on December 4th, 8th, 23rd, January 4th and 23rd. Pounding in the head, a thrill through the whole body, hot, congested head, bewildered expression betraying intense fear, great irritability, gruff, violent talk, restless running about, sudden violence to those about were regularly the prodromi of the attacks, which occurred suddenly, were alike in detail, lasted from ten minutes to half an hour and left only a memory of what transpired in the dream state. Intense headache, great weakness, irritability, stupidity for several hours, when the patient again returned to her previous condition. A knowledge of the connection of the symptoms indicated simplified the treatment. The neuralgia was treated and benefitted by subcutaneous injections of morphine (0,01—0,03 twice daily at the pain point), the nurses instructed to call the physician immediately on the slightest prodromal symptom; the attacks were checked by stronger injections, the anemia benefited by iron and diet, finally the

neuralgia was relieved by the continued employment of the injections,* when the attacks ceased, the weakness of the intellect and memory improved, the irritability, depression and hallucinations disappeared and in May 1866 the patient could be discharged and, from reports up to June 1867, has had no return of the former symptoms of her trouble.

In this case we evidently had a neuralgic psychosis, and so far it was clear. But not so clear is the pathological state of the central organ, the conditions in it by which a peripherál irritatisn can cause excitement in an inaccessible nervous area. Were the conditions of this morbid brain state to be sought simply in the faulty brain nutrition, the extreme anemia, or did another central neurosis exist, whose symptomatic expression, perhaps in a changed form, which in the patient were the attacks observed and of which the neuralgic phenomena were only a symptom? Two neuroses could be thought of here: hysterical and epileptic conditions. To say nothing of the anamnesis obtained in the meantime, neither the form of the attacks nor the psychical condition in the interval speak for hysteria, but afford strong presumptions that an epileptic trouble exists. This is again indicated by the great weakness of memory, great irritability and periodical psychical depression of the patient, her very abruptly occurring hallucinations of terrifying contents, the sort of attacks, their uniformity, which vary only in intensity, the delirium and hallucinations with their terrifying contents, their sudden occurrence, the amnesia for all that transpires during them, the transition to the former *status quo* through a stage of stupor and confusion. If all these may be recognized as the characteristic traits of an epileptic disorder, the assumption gains certainty when the patient once suddenly fell from her chair and had epileptic vertigo for several seconds. She cut her cheek by falllng out of bed one morning in a dazed, irritated condition, without being able to tell how it happened. The

*It is peculiar that while 0,015 of morphine subcutaneously caused vomiting, 0,06 injected during the attack produced no toxic symptoms, so the nervous system at that time must be in an entirely different condition. It was also possible to check the attack if the injection was given in the prodromal stage; in the attack the injection had no effect.

anamnesis, which had gradually become possible with the progressive improvement in the psychical condition and completed by the statements of the mother, perfected the evidence that it was a matter of a purely reflex epilepsy, whose convulsive paroxysms were represented by peculiar neuropsychical attacks, analogous to the epileptico-manic, and must be regarded as equivalents of the former, as transformed evidences of one and the same fundamental state.

The anamnestic factors were as follows:

W. W. is subject to no demonstrable predisposition to psychoses; a sister has epileptic convulsions. W. was very sickly in childhood and had left intercostal neuralgia from her tenth year, in whose excerbations she then was often anxious, depressed, complained of a pressure over her heart, ran about aimlessly, often in the middle of the night, and without knowing what she had done or where she had been when she returned after hours or days.

In her eleventh year she had convulsions, which she characteristically describes, when she was considered dead, during the attacks of intercostal neuralgia. She generally had violent clonic convulsions; consciousness was lost completely, often frothed at the mouth, unquestionable epileptic seizures, which occurred often, particularly at the time of her menses, and affected the patient until her fifteenth year.

Her menses began at thirteen and one-half years of age accompanied by pain and afterwards were very irregular and painful. From puberty the patient seems to have had chlorosis for many years. But the attacks of neuralgia did not cease with the convulsions. The hallucinations replaced them with the excerbations of the neuralgia. The same demonic phantom, which played so large a role in the later course of the disease, appeared at intervals of four and one-half weeks, spit fire at her, struck her (at the site of the neuralgia) with two large, black wings, commanded her to steal and do this and that, and if she did not immediately obey, she was jeered at and followed.

These horrible visions were generally accompanied by the feeling of roaring and pounding in her head. When she closed her eyes the phantom, which she had formerly rec-

ognized as a vision of the devil, became more vivid. When the attack reached its climax, it gave her no choice but to run here and there aimlessly from a blind impulse. The "evil one" then followed her for hours, bid her to take things she saw, to strike, etc. If she obeyed, she at once felt better. She had no clear consciousness of her surroundings during these attacks; she did not know people whom she met. When, after hours or days, she came home exhausted, she did not know where she had been, nor where she had gotten the things she had. These attacks had occurred every few weeks since her fifteenth year, only not so pronounced as those observed in the asylum. They were essentially alike in detail, only their intensity varied. Either the vision was only transient, shadowy and gave her a command, which she could not resist, or the phantom was so vivid, the disorder of consciousness so great, that see must blindly obey. She has had to take a great deal at the command of the "black man," thus experienced much trouble and persecution from people, had often been arrested and still known nothing of the thefts and often, after she had come to herself, *even* taken the things back to their owners. It has cost her many tears.

Occasionally the vision does not occur, the neuralgia merely causes great anxiety and restlessness. A feeling of intense oppression at the epigastrium came over her, an impulse to run about and pick up whatever she could get hold of, thoughts that she must strike everyone. In such a condition she had once really demolished furniture where she was working. These conditions generally correspond to mild attacks of the neuralgia; with their aggravation the vision always occurs and with their climax the foribund delirium described. The anamnesis also shows that the patient in the last few years has often fallen from her chair, collapsed unconscious while in the field at work and has awakened with an intense feeling of misery.

We have little more to append to the clinical description of the case. Evidently it is a matter of different symptom groups of one and the same fundamental condition, namely an epileptic reflex neurosis, which is manifested

either as simple psychical depression with anxiety and destructive impulses, as hallucinatory delirium of a definite sort, as vertigo, or as genuine epileptic convulsive paroxysms. In spite of the heterogeneousness of the clinical picture we plainly recognize in the pathogenesis, course, ever demonstrable peripheral irritation and the peculiar paroxysmal and intraparoxysmal psychical condition the common epileptic basis.

Case 6. Hysterical insanity occurring after an injury to the head.*

Elizabeth H., single, born February 17th, 1838, was brought to the asylum at Illenau in March 1864 owing to a severe nervous trouble, with which she had been afflicted since April 1861.

She had no hereditary disposition to neuroses or psychoses, developed well physically and mentally and never has had any menstrual disorder. The anamnesis just as little any special tendency to nervous disorders as a preddominance of the sensory and emotional functions over the others. Also all phenomena, which could have indicated peculiarities of character, were absent; active, moral, good natured. The patient has spent her life at needlework and managing the household affairs of her parents.

On April 4th 1861 she was severely assaulted while out in one of her father's fields by a neighbor, who, without any cause, except an altercation, struck her a violent blow on the left parietal region with his fist. She fell to the ground, got up soon but with a marked vertigo and headache. No other injuries from the assault were found; H. went home, but soon felt so badly that she must go to bed. She was greatly excited over the wrong done her, "tormenting pain appeared at the place she had been struck, so that she could not bear anything on her head." A number of circumstances, which then acted on the patient, served to increase her excitement: first the example of a woman in the vicinity who had pains and convulsions in consequence of a similar assault, further the examina-

*Friedreich's Blätter and Gerichtl Med. 1866.

tions of the court physicians and the legal proceedings, in which she was involved by the process commenced against the neighbor. The headache, which later developed to an extremely violent cervico-occipital neuralgia of the left side, became very troublesome; sensations, as though the skull would burst at the site of the trauma, irradiated sensations to the other sensory branches of the trigeminus, vertigo, restlessness, rigors, thirst, disturbed sleep were associated, so that the patient usually kept her bed and was under medical care.

With temporary improvement of the symptoms to April 16th (13th-16th) this condition continued, whose prominent symptoms were a very severe headache, various nervous troubles and slight fever. The headache was extremely troublesome, felt especially on the left side, but often irradiated to other areas of the trigeminus and prevented the patient from doing any steady work. On the 16th during its excerbation a tetanic spasm lasting half an hour occurred, on the 17th violent tonic and clonic convulsions, during which the patient's consciousness was clouded and the prick of a pin was not felt. These attacks, which then recurred almost daily for a month, ever more had the stamp of hysterical seizures, they took on a polymorphic character, affected first this, then that group of muscles, varied greatly in intensity and extent, first more of clonic, then more tonic nature; they were often foretold by the patient. The consciousness, at first only clouded, subsequently was completely lost during the attacks, so that the patient had no memory of what transpired during them, but occasionally attacks occurred, in which the consciousness was unaffected. It is to be noted that then an excerbation of the headache ushered in the attacks and their violence approximately correspond to its intensity, an attribute, which was well observed during the patient's stay at the asylum. In the Fall of 1861 the spastic symptoms became more rare, but the type of the neurosis became more complex, in that the psychical and sensorial functions were implicated in the disease process. The physician's report notes confusion of the ideas, religious delirium, ecstatic states, frantic outcries,

automatic acts, states of (hysterical) coma, (the so-called "silent convulsions" of patients), etc. In the so-called intervals the patient is relatively well, only capable of the lightest occupation, but the headache ever hangs over her like Damocle's sword, whose excerbations induce the attacks. The notes of the court physician state that the site of this pain is observed to be exactly in the same place as here, namely the left parietal bone (February 1862). Only non-essential disorders of the other functions of the body were observed during this period; menstruation was regular, only the attacks increased while it lasted; the intestinal action is somewhat sluggish, sleep quiet, except when interrupted by the attacks; signs indicating a cerebral focal disease, like palsies, etc. are not observed; the pupils generally react sluggishly and are usually contracted. As the convulsions have the evident stamp of hysterical paroxysms, certain attributes of the psychical life, sudden alternation for no cause from marked depression to the feeling of extreme well being and the most cheerful views of life, also point to the hysterical nature of the trouble. A clearer connection is found between headache and disposition, which is still more plainly shown during her stay at Illenau, namely a greater depression of the feelings always appeared with excerbations of the headache and periods of cheerful disposition coincided with its remissions.

In the Spring of 1862 the headache and the attacks became less frequent, but in the Winter of 1862-3 returned more violently and somewhat changed in their character, in that the convulsive muscular disorder became less prominent and represented more the picture of chorea major with periodical delirium and hallucinations, whose subject was the matter of the assault. They maintained this stamp subsequently; consciousness of what transpired during the attacks was always absent, and these returned at intervals of fourteen days to a few weeks, the patient began a series of very confused actions, *e. g.*, ran here and there, out to the forest and fields, in her delirium mistook persons she met, in that she considered them supposed pursuers and thus developed extraordinary regardlessness, agility and muscular

strength. In the intervals, save a depressed disposition, the patient had no psychical disorder, but suffered much from the constant headache, which almost always prevented her from working. A permanent improvement of the trouble was sought for in vain from repeated bleedings, blisters, issues, setons in the neck, quinine, morphine, etc., etc. It is to be noted that the visual axies gradually assumed a permanent convergent direction.

The examination of the patient on her admission to the asylum in March 1864 presented the f llowing condition: she is of medium size, strongly built, well nourished; the skull is regular, the visual axies some what convergent; no motor disorders, no disorder of the functions of the vegetative organs; menses regular. Examination of the place where she had been struck showed no pathological changes the bone or tissues covering it, while the entire left occipital nerve in all its branches was hyperasthetic and pressure in its course caused intense pain through its whole tract, for a long time the patient has been unable to bear the least weight on her head without immediately being attacked with severe neuralgia. The parietal point especially sensitive was where the left parietal bone unites with its fellow and the occipital bone; this point is about a quarter of an inch in extent; a second was found in the course of the occipital nerve behind the mastoid process (occipital point). The intensity of the neuralgia varied. The patient was never entirely free from pain and inexhaustible in her description of the feelings she had in her head; she either complained of cold, shivering, burning, throbbing, twitching, stabbing, a feeling as though her head would burst, wind blowing through a crack on her ear (corresponding to the course of the occipital nerve), water ran back and forth between the skull and scalp, etc. Other disorders of sensation were absent, especially contingent muscular hyperasthesia; the higher senses were somewhat hyperasthetic, hallucinations on admission not to be demonstrated. The mental state was dull, depressed, painful; the patient's senses and fancy were especially engaged with her trouble, directed to her painful sensations and in the

memory of her assault, solicitude about her life's happiness, her health. She was pleased when she could divert the physician's attention and others' sympathy to herself, for the least doubt as to the gravity of her disease or only the abatement of others' interest immediately caused a very depressed mood. In general this was dependent on the existing intensity of the neuralgia, a dependence, which was very plainly illustrated later. This habitual depression, the mental impulse, in which the ideas were confined by the painful feeling, the desire observed in all these patients to excite others' interest and sympathy, even if necessary by half voluntary exaggeration of the disease symptoms, an increased susceptibility to mental impressions, corresponding to the hyperasthesia in the neuralgic area, were the most marked psychical anomalies, which were met with on the patient's admission. In the early days of her residence the disease type was completed by the occurrence of spasmodic attacks, which continually recurred every few days or weeks. They were always due to violent excerbations of the cervico-occipital neuralgia and had as more remote causes almost exclusively psychical factors. It was either abatement of interest in her sickness on the part of those about, suspension of the physician's attention, unpleasant meetings with the other inmates, disturbance of rest or convulsive attacks of the other patients which in the intense psychical excitability caused the attacks, or it was morbid irritations directly producing the neuralgia, like blows on the head, exposure to greater heat by sitting in the sun with uncovered head, which induced motor phenomena in the extreme spinal reflex excitability; for a time irradiations of other neuralgic troubles to the locus minores resistentiae in temporarily intensely increased reflex excitability, unpleasant odors, intense sense impressions or even mental irritation, *e. g.*, the vivid reproduction of the occurrence in the field, subsequently increased to a hallucination, by which she had been made miserable, sufficed to produce, by recurrence of the neuralgia, spasmodic and hallucinatory phenomena. The connection indicated between disposition, neuralgia and attack might be more plainly demonstrated: if the neuralgia

exacerbated the disposition passed from its state of relative equilibrium to that of depression, and it was but a step to the attack; but all that affected the emotions unpleasantly, was suitable to immediately induce the neuralgia—a condition, which, as the trouble increased, subjected the patient irresistibly to this morbid impulse. As all these causative factors acted almost exclusively during the day, it is comprehensible that the patient was free from her attacks at night. It is hard to project a type for it, for first this, then that function was involved and the phenomena of disordered nervous action vary greatly in their intensity.

With increasing pains in the occipital nerve and their irradiation to branches of the fifth and cervical nerves, indications of globus caused the patient continually increasing restlessness and anxiety, which were either located at the sight of the neuralgia or the epigastrium; the bulbi were distorted, the strabismus convergens increased, marked vascular paralysis in the area of the nerves affected occurred, a symptom, which generally accompanied the more intense periods of the neuralgia, if an attack did not occur. Consciousness was clouded, the patient was aware that her thoughts were confused, "all was topsy-turvy in her head," talked incoherently, mistook those about and made silly, disconnected replies to questions; consciousness of the objective world was completely extinct, her face had a grotesque expression and was convulsively distorted in every way, the vision of the man who had struck her, made its appearance, he pursued her, threatened to strike her, she felt the blows, in that in her disordered consciousness she misinterpreted the pains due to the neuralgia. These were so violent that even in the wholly absent sense perception pressure on the pain points was felt and the attack immediately aggravated. A desperate struggle with the hallucinatory form now ensued, in which the patient displayed an incredible agility and muscular strength; she heard her assailant scold, jeer, threaten and exhausted herself in endless vociferations; she leaped upon the furniture, over the bed with remarkable dexterity in trying to get away from him, until finally these muscular actions bearing the stamp

of voluntary movements became poorly coordinated, similar to the movements of chorea magna or instead of these or in connection with them general clonic convulsions appeared, interrupted temporarily by tetanic rigidity of the extremities. The delirium then continued sometime; gradually, after a soporous condition of twenty minutes to half an hour, the patient then became conscious of the objective world rather quickly, complained of violent occipital pain, general exhaustion, talked confusedly for some time, presented a clouded consciousness and then became herself again as the pains abated. Memory of what transpired during the attack was entirely absent.

The whole psychical, sensory and motor sphere was not always affected sympathetically. Without an assignable reason incomplete attacks occasionally occurred, which consisted either of hallucinatory delirium or convulsions similar to chorea magna or hystero-epilepsy.

The treatment (quinine, morphine, chloroform, atropine, nitrate of silver with extract of aconite, warm baths, traitement moral) was of no avail.

In January 1865 it was decided to employ induction electricity and a strong cutaneous faradization of the parietal pain point was given twice a day and an intense induction current passed through the occipital nerve for ten minutes. The result was surprising; after the first sitting the patient bore strong pressure at the pain points, the attacks became more rare, the disposition more cheerful, the neuralgia ceased for hours and was much less severe. But unfortunately it returned on the least emotion, the faradization became troublesome and was changed to subcutaneous injections of morphine (1 or 2 grains twice a day at the pain points). The effect was more favorable than that of electricity; the condition improved so that subcutaneous injections of water were given for several weeks in August without the patient's knowledge and had the same effect on the neuralgia. But not so with the restlessness, anxiety, irritability, which had disappeared so long as she was under the effect of large doses of morphine; the sudden withdrawal of the habitual nerve stimulant produced these

again, insomnia also appeared and consequently the morphine treatment had to be resumed. The favorable effect on the general condition was not wanting, and in consequence of the subcutaneous injections a large abscess of the scalp had occurred in August at the site of the neuralgia. The neuralgia was entirely absent for a time, only returned rarely and feebly and the patient seemed to be convalescent.

But still in August a violent intercostal neuralgia appeared on the left side at the heignt of the second rib, after migratory neuralgic troubles in the various intercostal nerves having shown themselves. It is remarkable that the new neuralgia took the place of the other in respect to the genesis of the attacks and the patient's disposition. The former again occurred in exactly the old way, as soon as the intercostal neuralgia excerbated and was accompanied by globus and feelings of anxiety, but without muscular hyperasthesia being found in the gastric region. The neuralgia yielded to treatment by subcutaneous injections of morphine, which must be increased to six grains *pro die*. Under the influence of these large doses the exaggerated reflex excitability of the nervous system was unmistakably lessened finally, so that the etiological factors above referred to were no longer so readily capable of producing the attacks, in spite of the continuance of the moderated neuralgia, and the patient was able to control herself by the regained force of will. But the morphine, which seemed to produce a very quieting effect, an agreeable disposition and general feeling, was an essential stimulant and breaking it off was hard, the effort causing the patient pain, abatement in her struggle and even self-control, when spasmodic attacks would appear. But by gradually lessening the dose and more rigid psychical treatment of the patient, the habit was finally broken. With respect to the treatment of the incipient attack, it was often possible to check it by chloroform narcosis, faradization or a subcutaneous injection at the site of the neuralgia, an evidence of its reflex origin.

The condition of the patient in the interval depended

almost exclusively on the presence or absence of neuralgia. The painful ideas always ran parallel to the painful feelings. The diminution of the psychical irritability kept pace with lessening of the reflex excitability in other domains of nerve action; the emergence from the narrow and morbid circle of ideas in which the patient was confined, was possible as soon as the morbid restraint was broken, to which the feeling was subjected by the pain. At times when this was very intense, taedium vitae, suicidal thoughts, by cutting the throat, etc., visions of the man, who had assaulted her, occurred, but only very transiently. The other branches of the sensory nerves were rarely affected. Once there was a general spinal hyperasthesia for several days, the patient often had nervous aphonia and arthralgia, which appeared and disappeared suddenly, but it is worth noting that when neuralgic troubles were transient they caused depression, but were never able to produce an attack. Mild gastric crises, tendency to constipation, besides cessatio mensium, were the only disorders of the vegetative organs we observed from July to November 1865.

The patient essentially improved, *i. e.* was free from her attacks for a long time and her neuralgic trouble became more rare and milder, so that in January 1866 she went home.

In an effort to become better acquainted with the transitory neuralgic psychosis on an epileptic or hysterical basis by means of case reported, no slight difficulty is encountered. The great majority of these cases are carelessly observed or faultily reported, as *e. g.* Oppenheim's interesting case (Archiv f. Psych. XVI., p. 744), which I might claim to be a case of hysterical as well as of epileptic transitory psychosis.

Most of the older observations are not wholly reliable etiologically.

J. von Wagner ("Trauma, Epilepsie und Geistesstörung," Jahrb. f. Psych. VIII., 1, 2) has made a valuable contribution to traumatic psychical epilepsy.

Under citation of casuistics and report of especially pertinent cases of psychical (reflex) epilepsy occurring from

head injuries Wagner emphasizes the fact of the rarity of traumatic reflex epilepsy and concludes that special conditions must be present for its development.

As such he finds: special hereditary or acquired predisposition, brain concussion combined with the trauma, the occurrence of trauma at an early age, trauma of the head (still other parts of the body are not absolutely excluded), lesions of the sensory trigeminal trhcts, formations causing pressure or other irritation.

Especially interesting is the author's statement that "psychical" epilepsy is three times more common with traumatic than a non-traumatic cause of this neurosis, as appears from the work of the Prussian Minister of War on diseases of the nervous system in the German army in the war with France. J. von Wagner correctly requires that in every case of recidivous transitory mental disorder of the so-called epilepsy type a careful examination of the body be made for residues of trauma (scars).

Such a scar can then only be regarded as the cause of the trouble, when it is observed to be the starting point of an aura of attacks. Worthy of note, as shown by Wagner, is the great rarity of classical seizures of the neurosis in such reflex epilepsy, but in whose stead symptoms of petit mal are quite often observed. The psychical attacks are almost without exception dreamy (Dämmer) states.

Valuable, likewise forensically well observed cases of transitory psychical epilepsy have been reported by Zierl in Friedreichs Blättern für gerichtl Medicin, 1882, 5, 1883, 2 (Shussverletzung des Arms bei Sedan), 1885, 1 (Verbrechen des Mordes und Raubes Vor 4 Jahren Stichverletzung in die linke Brustseite. Reflexpsychose von epilept. Charakter. Stuporöse und Dämmerzustände). Also the cases I have published (Psychopathia sexualis, 9 Aufl., Beob. 148 and Jahrb. f. Psych. XIV., 3) deserve consideration.

Case 7. Psychical reflex epilepsy.

S., 42, law-clerk, married, had a very irrascible father; a sister died from convulsions in childhood, a brother is an imbecile. The patient had scarlatina when a child, from youth to puberty attacks of somnambulism, from then on

had attacks every few weeks of violent cephalgia localized in the forehead. These lasted twenty-four hours and generally were so violent that he was very depressed and weary of life. He was most afflicted in the winter.

Patient served twelve years in the army, felt well except for his attacks of headache.

In 1866 at Verona, without cephalgia, transitory insanity for fourteen hours with amnesia.

He was told that he sprang out of bed in the night and ran out into the yard, where he had stood by the well crazy all the following day.

Later the patient was a conductor on the railroad. In 1870 while unloading a barrel he was struck on the head. He became unconscious, had a lacerated wound along the right coronal suture to the frontal tubercle. Since then the patient has not felt well and capable of work. He had become susceptible to the heat of the sun and alcohol, noticed weakness of memory, particularly for names and numbers, was readily confused by relative mental effort, felt spontaneous pain in the cicatrix of the head wound, especially in stormy weather or from the use of small amounts of alcohol, and in its violent excerbations often had peculiar attacks of momentary loss of consciousness, much like petit mal, from which he recovered with fixed gaze, inability to direct his eyes and slightly confused. He must vigorously shake his head before he was wholly himself again. For the last few years the patient has earned a small salary as clerk for a lawyer. When he found that S., although willing and industrious was forgetful, often hasty in his work, very peculiarly anxious and with fixed gaze for a moment, he discharged him November 13th 1877. S. was greatly agitated when he considered his unfortunate financial condition and the illness of his wife. He begged a loan of fifteen florins, went to the telegraph exchange with this money, had a violent pain at the site of the scar and increasing confusion. He now only knew, as in a dream, that everything looked strange to him, soon went away without a reason, sent three florins to his wife by a messenger, drank a glass of beer on his way home. His con-

fusion constantly increased. On the street everything seemed misty, he could not find his way home. From now on amnesia for all that transpired until he came to himself in the hospital on the 17th.

On the afternoon of the 14th he was arrested. While stupid and confused he ran about the streets of Graz listening at the walls. He continually murmured "six per cent and five per cent interest, savings bank, sue them all," then listening and gesticulating. When received at the clinic on the 15th marked disorder of consciousness still. To all questions the patient stereotypedly reiterated the above disconnected words. After a few hours he became somewhat more rational, correctly told who he was, complained of violent headache. He believed he was at home, called to his wife, wanted coffee, continued to repeat "savings bank, six per cent," etc. Patient had no fever, expression is confused, skull normal, beside the right coronal suture a scar tumid and very painful in the lower part, pupils medium size, react sluggishly. Sleep good. In the evening of the 16th more clear. Patient noticed that he was not at home, but was unable to orient himself. Early on the 17th after a good night's sleep he was lucid. He began to cry about his misfortune that nis wife was sick at home. Patient presented no farther psychical disorder. The cicatrix is no longer spontaneously painful and but slightly on pressure. After a few days S. left the clinic, felt so well under bromide treatment that he did not consider necessary the excision of the scar as advised.